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**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Application Number: 10/019,273
Filing Date: April 09, 2002
Appellant(s): PEREGO ET AL.



Harris A. Pitlick
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 8/8/05 appealing from the Office action mailed 5/6/05.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(8) Evidence Relied Upon**

The following is a listing of the evidence (e.g., patents, publications, Official Notice, and admitted prior art) relied upon in the rejection of claims under appeal.

| | | |
|---|---|---|
| 5,026,936 | Leyshon et al. | 06-1991 |
| 3,832,449 | Rosinski et al | 08-1974 |

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 112***

1) First paragraph (claims 17-20)

Regarding claim 20, applicants added new matter into these claims since as indicated by applicants, the specification supports only a method of making ZSM-12 not any unspecified catalyst as recited in the claims (see the specification).

Regarding claims 17-19, the limitation "for 25 hours or **more**" (emphasis added by the examiner) is a new matter since the word "more" makes the timing go up to indefinite such as a century. Therefore, the specification does not support this timing.

2) Second paragraph (claims 17-19)

Claims 17-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 17-19, "25 hours or more" is indefinite since it is unclear how long the word "more" cover.

***Claim Rejections - 35 USC § 103***

Claims 1-14 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leyshon et al (5,026,936) in view of Rosinski et al (3,832,449).

Leyshon discloses a process of cracking an olefinic feedstock such as hexene into propylene in the presence of a catalyst containing ZSM-12 zeolite (the abstract; col. 3, line 38 thru col. 4, line 19).

As disclosed by Leyshon, the ZSM-12 used for the cracking is disclosed by Rosinski.

Rosinski discloses making a ZSM-12 which has having a silica/alumina ratio of from 20-100 (the abstract).

Leyshon discloses that the feed can be olefin or paraffin or mixture (col. 3, lines 39-45). Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Leyshon process by using any olefin feed having any

percentage of olefin to arrive at the applicants claimed process since it is expected that using any feed would yield similar results.

The temperature of the process can be found on column 3, lines 48-50 of Leyshon.

The WHSV can be found on column 3, lines 59-62 of Leyshon.

The activity and conversion of the Leyshon catalyst is expected to be the same as the catalyst used in the claimed process since both is ZSM-12 and having similar silica/alumina.

Rosinski also discloses how the ZSM-12 is prepared including steps: adding sodium aluminate with colloidal silica and tetraalkylammonium hydroxide; crystallization, washing with water, drying, and calcinations, ion exchanging (col. 2, lines 1-25; examples).

It appears that Rosinski does not disclose using tetramethylammonium hydroxide in the place of tetraalkylammonium hydroxide, ammonium acetate as ion-exchange agent, and calcination in air.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Leyshon process by using tetramethylammonium hydroxide as the tetraalkylammonium hydroxide, ammonium acetate as ion-exchange agent and calcination of the catalyst in the air since it expected using any material and calcination in the air or in the absence of air would yield ZSM-12 having similar activity.

Regarding claim 13, although Leyshon does disclose using a ZSM-12 having a silica/alumina of from 150 to 200. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Leyshon process by using a ZSM-12 having a silica/alumina higher than 100 such as 150 to arrive at the applicants'

claimed process since applicants do not show any criticality for using a ZSM-12 catalyst having that range of silica and alumina.

**(10) Response to Argument**

Applicant's arguments filed 3/29/2005 have been fully considered but they are not persuasive.

The argument that example 3 and example 4 show the difference of performance of ZSM-12 having silica/alumina of 100 (claimed) and the same having of silica/alumina of 250 (comparative) is not persuasive since applicants do not claim using a ZSM-12 having 100 (see claims). Note that it has been established that evidence of unobviousness must be commensurate in scope with the claims. *In re Kulling* 14 USPQ 2d 1056, 1058 (Fed. Cir. 1990); *In re Clemans* 206 USPQ 389 (CCPA 1980); *In re Dill* 202 USPQ 805, 808 (CCPA 1979); *In re Greenfield* 197 USPQ 227 (CCPA 1978); *In re Lindner* 173 USPQ 356, 358 (CCPA 1972); *In re Hyson* 172 USPQ 399 (CCPA 1972); *In re Tiffin* 171 USPQ 294 (CCPA 1971); *In re Mclaughlin* 170 USPQ 209 (CCPA 1971); *In re Kennedy* 168 USPQ 587 (CCPA 1971); *In re Law* 133 USPQ 653 (CCPA 1962). Further, a ZSM-12 having a Si/Al ratio of 100 is disclosed by Rosinski

The argument that example 3 and example 5 shows that ZSM-12 outperforms ZSM-5 is not persuasive since these two zeolites have different ratio of Silica/Alumina. Therefore, it is totally incorrect to say a ZSM-12 is better than ZSM-5 having a similar Silica/Alumina. Note that it has been established by the patent law that the cause and effect sought to be proven is lost here in the welter of unfixed variables. *In re Heyna*, 360 F.2d 222, 228, 149 USPQ 692, 697 (CCPA 1966).

The argument that Leyshon prefers most particularly ZSM-5 zeolite is not persuasive since Leyshon discloses ZSM-5 is especially useful not preferred. This does not mean that Leyshon teaches away using ZSM zeolites other than ZSM-5.

The argument that in example Leyshon uses ZSM-5 is not persuasive since it has been held that a disclosure in a reference is not limited to its specific illustrative examples, but must be considered as a whole to ascertain what would be realistically suggested thereby to one ordinary skill in the art. *In re Uhlig*, 54 CCPA 1300 376 F2d 320; 153 USPQ 460.

The argument that according to *In re Baird*, a claimed species of subgenus is encompassed by a prior art genus is not sufficient by itself to establish a prima facie case of obvious is not persuasive since Leyshon discloses clearly that ZSM-12 in a very limited list of others can be used as the catalyst for cracking olefins (see col. 4, lines 13-14).

The argument that Leyshon requires a subsequent metathesis is correct. However, applicants' claimed process does not exclude this reaction.

The argument that regarding claim 13, Rosinski directs persons skilled in the art away from the molar ratio of this claim is not persuasive since as discussed in the rejection, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Leyshon process by using a ZSM-12 having a silica/alumina higher than 100 such as 150 to arrive at the applicants' claimed process since applicants do not show any criticality for using a ZSM-12 catalyst having that range of silica and alumina.

Regarding claim 14, the 100 ratio is clearly disclosed by Rosinski (the abstract).

The argument that regarding claim 17-19, the applied prior art neither discloses nor suggest the performance of the catalyst for the prescribed time is not persuasive since the present

catalyst is not different from the prior art catalyst. It is expected the two catalysts have the same performance.

The argument that regarding claim 20, the prior art neither discloses nor suggests preparing a zeolite by the steps recited therein is not persuasive since as discussed in the above rejection, Rosinski also discloses how the ZSM-12 is prepared including steps: adding sodium aluminate with colloidal silica and tetraalkylammonium hydroxide; crystallization, washing with water, drying, and calcinations, ion exchanging (col. 2, lines 1-25; examples). Rosinski does not disclose using tetramethylammonium hydroxide in the place of tetraalkylammonium hydroxide, ammonium acetate as ion-exchange agent, and calcination in air. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Leyshon process by using tetramethylammonium hydroxide as the tetraalkylammonium hydroxide, ammonium acetate as ion-exchange agent and calcination of the catalyst in the air since it expected using any material and calcination in the air or in the absence of air would yield ZSM-12 having similar activity. Further, applicants do not show any criticality for these steps of making the catalyst used for the process.

The argument that "for 25 or more" is supported figure 1 which shows until at least 140 hours is not persuasive since figure shows only up maximum around 140 hours not such as 160 hours ort infinitive.

The argument that with regarding claim 20, while the relied on disclosure is for preparation of ZSM-12, ZSM-12 is a species of a large-pore zeolite would be prepared in a similar manner is not persuasive since even these large pore zeolites other than ZSM-12 cannot

be recognized in the specification. If so, it is unclear in the specification which large pore zeolites can be similarly produced.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

T.D.

09/14/2005

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